VATULEV, V.N.

Effect of the structure of crystal lattices on the absorption and luminescence spectra of impurities in molecular crystals. Izv.AN SSSR.Ser.fiz. 27 no.4:512-514 Ap '63. (MIRA 16:4)

1. Institut fiziki AN UkrSSR.
(Crystal lattices) (Crystals—Spectra)

BRODIN, M.S.; VATULEV, V.N. [Vatul'ov, V.M.]; ZAKREVSKIY, S.V. [Zakr'vs'kyi, S.V.]

Luminescence induced by the action of a beam from a ruby laser on sodium uranylacetate crystals. Ukr. fiz. zhur. 9 no.10:1150-1151 O '64 (MIRA 18:1)

1. Institut fiziki AN UkrSSR, Kiyev.

VATULEV, V.N.; SHEREMET, N.I.; SHPAK, M.T.

Luminescence of benzene at low temperatures. Opt. i spektr. 16 no. 4:577-586 Ap '64. (MIRA 17:5)

L 24915-65 EWT(l)/EWT(m)/EPF(c)/EWP(j)/T/EEC(b)-2 Pc-4/Pr-4 IJP(c) RM

ACCESSION NR: AP5003411 S/0181/65/007/001/0042/0045

AUTHORS: Vatulev, V. N.; Prikhot'ko, A. F.

TITLE: Polymorphic transformation of the martensitic type in crystals of octahydroanthracene

SOURCE: Fizika tverdogo tela, v. 7, no. 1, 1965, 42-45

TOPIC TAGS: polymorphic transformation, martensitic transformation, anthracene, organic crystal, double refraction, absorption spectrum

ABSTRACT: Two manifestations of the polymorphic transformation of octahydroanthracene crystals were investigated. One consists in the abrupt change in birefringence observed in thin-crystal plates of the material grown from a melt between the plates of a quartz cuvette, and cooled from the crystallization temperature (65C), and also in a freely grown bulk sample. The other manifestation is a change in the absorption spectrum which can be attributed only to

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L 24915-65

ACCESSION NR: AP5003411

the polymorphic realignment of the crystal lattice. Some details of the polymorphic transformation, which are still difficult to interpret at the present time, are discussed. The reasons for classifying such a transformation as martensitic are briefly mentioned. Orig. art. has: 2 figures.

ASSOCIATION: Institut fiziki AN UkrSSR, Kiev (Institute of Physics, AN UkrSSR)

SUBMITTED: 13Jun64 ENCL: 00 SUB CODE: SS, OP

NR REF SOV: 002 OTHER: 000

Card 2/2

L 6494-66 EWA(k)/FBD/EWT(l)/EWT(m)/EWA(h)/T/EWP(t)/EWP(b)/EWA(m)-2/EWP(k)/
ACC NR: AP5027992 EEC(k)-2 SOURCE CODE: UR/0386/65/002/007/0317/0320
SCTB/IJP(c) WG/JD/GG

AUTHOR: Brodin, M. S.; Vatulev, V. N.; Zakrevskiy, S. V.

ORG: Institute of Physics, Academy of Sciences UkrSSR, Kiev (Institut fiziki Akademii nauk Ukrainskoy SSR)

TITLE: The effect of intense laser radiation on the dispersive properties of "transparent" crystals

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. (Prilozheniye), v. 2, no. 7, 1965, 317-320, and insert facing page 316

TOPIC TAGS: light dispersion, laser effect, thermal optic effect, light interference, cadmium sulfide, zinc sulfide, semiconductor

ABSTRACT: The authors have observed changes induced in the dispersive properties of some semiconductor crystals which are transparent in the ruby-laser radiation range, at the instant of a laser pulse. These changes are important in studies of the conditions for self-trapping of a laser beam, for the generation of harmonics by different means, and for similar phenomena. The spectra were obtained with an ISSh-500 flash lamp with flash duration time of 2—3 μsec.

Card 1/3

A delay circuit made it possible to photograph the spectrum during different instants of the laser pulse (~400 μsec long and with energy 1.5 J). CdS crystals in the form of thin strips were fastened on a glass base. Besides the absorption edge, it was possible to distinguish on the spectrograms obtained at room temperature also the interference pattern due to multiple reflection. By photographing the spectrum at the instant the laser pulse is applied with the laser beam partially focused, small but distinct shifts of the interference fringes towards the longer wavelengths was observed. These shifts corresponded to an approximate average increase of ~0.01 in the refractive index. Sharper focusing (spot diameter smaller than 1 mm) damages the irradiated section of the crystal. A small shift of the interference pattern was observed also in the crystal regions adjacent to the irradiated section. Preliminary observations carried out on some ZnS samples have shown an equally noticeable shift. While the mechanism of the observed changes in the dispersion and absorption properties is not yet clear, it is suggested that the changes pertaining directly to the irradiated section of the crystal can be connected with the action of the electric field of the light wave, and also with some heating of the crystal. It is less probable that the observed shift is due to the influence of the elastic waves that may be produced. The situation is even less clear with respect to the changes in the non-irradiated section of the crystal. A final clarification of the mechanism of the described phenomena calls for further

L 6494-66
ACC NR: AP5027992

research. The effect of local and over-all heating of the crystal is discussed briefly. Orig. art. has: 1 figure.

SUB CODE: OP, SS/ SUBM DATE: 28Jul65/ ORIG REF: 001/ OTH REF: 003/
ATD PRESS: 4140

nw
Card 3/3

VATULEV, V.N. [Vatullov, V.A.]; PRYKHOT'KO, A.F. [Prykhot'ko, A.F.]

Optical and spectral studies of polymorphous transformations in octahydroanthracene crystals. Ukr. fiz. zhur. 10 no.7:763-77 Jl '65. (MIRA 18:8)

1. Institut fiziki AN UkrSSR, Kiyev.

L 38483-66 EWT(m)/EWP(j) IJP(c) RM/JW/FDN

ACC NR: AR6017246 SOURCE CODE: UR/0058/65/000/012/D042/D042

46
B

AUTHOR: Vatulev, V. N.; Sheremet, N. I.; Shpak, M. T.

TITLE: Spectral investigation of crystalline benzene at low temperatures

SOURCE: Ref. zh. Fizika, Abs. 12D350

REF SOURCE: Tr. Komis. po spektroskopii. AN SSSR, t. 3, vyp. 1, 1964, 468-472

TOPIC TAGS: absorption spectrum, luminescence spectrum, exciton zone, crystalline benzene

ABSTRACT: The luminescence and absorption spectra of crystalline benzene were investigated at 20.4 and 4.2K. The temperature relationships in luminescence spectra were evaluated. Preliminary information on the structure of benzene exciton zones, including their width and effective-mass characteristics, were obtained on the basis of a qualitative analysis of the shape of bands corresponding to transitions from the exciton zones to the basic vibration level. [Translation of abstract] [KP]

SUB CODE: 20/ SUBM DATE: none/

Card 1/1 pb

ACC NR: AP6023574 SOURCE CODE: UR/0018/66/000/007/0080/0082

AUTHOR: Vavilin, Yu. (Lieutenant colonel)

ORG: none

TITLE: Command of an antiaircraft battery during a march

SOURCE: Voyennyy vestnik, no. 7, 1966, 80-82

TOPIC TAGS: antiaircraft defense, air support tactic

ABSTRACT: The author briefly describes the command of an antiaircraft artillery battery providing protection for combined units during a march. He indicates that antiaircraft weapons are deployed very near the road at 40- to 50-m intervals. He also describes the duties of a battery's reconnaissance party. [WS]

SUB CODE: 15/ SUBM DATE: none

Card 1/1 UDC

L 01058-67 EWT(l)/EWP(e)/EWT(m)/EEC(k)-2/T/EWP(t)/ETI/EWP(k) IJP(c) AT/WH/WG/

ACC NR: AT6015132 GD/JD SOURCE CODE: UR/0000/66/000/000/0077/0090

AUTHOR: Brodin, M. S.; Vatulev, V. N.; Zakrevskiy, S. V.; Kamuz, A. M.

ORG: Institute of Physics, AN UkrSSR (Institut fiziki AN UkrSSR)

TITLE: Some effects of the interaction between a ruby-laser beam and transparent crystals

SOURCE: Respublikanskiy seminar po kvantovoy elektronike. Kvantovaya elektronika (Quantum electronics): trudy seminara/ Kiev, Naukova dumka, 1966, 77-90

TOPIC TAGS: laser, ruby laser, solid state laser

ABSTRACT: The two-photon effects in some crystals and the effect of a laser beam on crystal dispersion were studied by the authors for some time. The mechanism of crystal destruction in some experiments could not be explained by simple heating. Additional experiments intended to clarify some points are described in the present article. A ruby crystal 12-cm long 12-mm diameter, a polished-tin reflector, and an IFP-2000 flashtube were used in the test laser. The radiation spectrum of anthracene powder served to verify the intensity of the laser beam and the method of

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L 01058-67

ACC NR: AT6015132

spectrum recording. Both structured and structureless radiation spectra were observed in sodium-uranyl-acetate crystals; dimples, pinholes, and small cracks were formed in the crystals under the influence of the focused laser beam. The effects of a concentrated beam upon dispersion and fundamental-absorption-edge position were studied on ZnS and CdS crystals. It was found that a nonfocused laser beam did not affect the spectrum; a sharp-focused beam caused a long-wave displacement of all visible interference lines and absorption edge; various interpretations are discussed. Samples of anthracene, NaCl, KCl, KBr, and plexiglas were tested for destruction by sharp-focused laser pulses. The mechanism of destruction was found to be complex, dependent on the properties of the specimen, and resembling application of large local mechanical forces. Orig. art. has: 5 figures.

SUB CODE: 20 / SUBM DATE: 12Feb66 / ORIG REF: 008 / OTH REF: 016

awm
Card 2/2

VATULIA, N.

"On the Synthesis of the Benzylidene Derivative of 3-Nitroaniline." Bogoslovsky, B. N. and Vatulia, N. (p. 653)

SO: Journal of General Chemistry (Zhurnal Obshchei Khimii) 1945, Volume 15, no. 7-8.

1. VATULIN, B.

2. USSR (600)

4. Agriculture

7. Raising the productivity and technical level of agriculture in the U. S. S. R. Kolkh.proiz. 12 no. 21, 1952.

9. Monthly List of Russian Accessions, Library of Congress, March 1953, Unclassified.

VAULINA, E.N.; DOROGOSTAYSKAYA, Ye.V.; NOVICHKOVA, L.N.; SDOBNIKOVA, N.V.

Materials on a study of species of Chlamidomonas occurring in soils of the U.S.S.R. Trudy Bot. inst. Ser. 2 no.12:18-35 '59. (MIRA 12:12)

(Algae) (Soil micro-organisms)

PANFILOV, G.; LEBEDEV, A.; VATULIN, I.

The banner of the precongress competition is raised! Okhr. truda i sots. strakh. 4 no.3:4-5 Mr '61. (MIRA 14:3)

1. Predsedatel' komissii okhrany truda zavkoma Pervogo gosudarstvennogo podshipnikovogo zavoda (for Panfilov). 2. Nachal'nik otdela tekhniki bezopasnosti zavoda "Serp i molot" (for Lebedev). 3. Predsedatel' komissii okhrany truda Moskovskogo avtozavoda imeni Likhacheva (for Vatulin).
(Industrial hygiene)

VATULIN, Ivan Kuz'mich; GELLER, Leonid Il'ich; TROITSKIY, Petr Aleksandrovich; NOVOSPASSKIY, V.V., red.; ZAYTSEVA, L.A., tekhn. red.

[Principles of production planning for the information of the trade-union activist group] Profsoiuznomu aktivu o planirovanii proizvodstva. Moskva, Profizdat, 1963. 95 p. (Bibliotechka profsoiuznogo aktivista, no.3(51)) (MIRA 16:7)

(Industrial management) (Trade unions--Officers)

VAULIN, V.A.; POMAZAN, I.F.; ANOSHKIN, A.M.; POPKOV, Yu.L.

Using deep holes in breaking ores in shrinkage stoping.
Biul.tekh.-ekon.inform. no.8:5-7 '59. (MIRA 13:1)
(Stoping(Mining))

L 24699-65 EWP(e)/EWT(m) WH

ACCESSION NR: AP4048872 S/0185/64/009/010/1150/1151

AUTHOR: Brodin, M. S.; Vatul'ov, V. M.; Zakrevs'ky*y, S. V. 12 11 B

TITLE: Luminescence appearing in crystals of sodium uranyl acetate irradiated by a ruby laser beam

SOURCE: Ukrayins'ky*y fizy*chny*y zhurnal, v. 9, no. 10, 1964, 1150-1151

TOPIC TAGS: nonlinear effect, crystal irradiation, crystalline powder irradiation, crystal irradiation with laser, crystal luminescence, ruby laser beam

ABSTRACT: The high intensity of laser beams makes is possible to observe and investigate a series of nonlinear effects. It also makes the observation of luminescence possible when a substance becomes transparent to the frequency of the exciting light. To investigate nonlinear effects, sodium uranyl acetate single crystals and crystalline powders were irradiated with the focused beam of a ruby laser and the luminescence spectra were

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L 24699-65
ACCESSION NR: AP4048872

photographed. Irradiation of crystals with a focused laser beam caused the formation of cavities or through-holes. The destruction of the crystals may be due to mechanical forces or to thermal effects. One may conclude that the line-structured single-crystal spectrum is associated with laser excited luminescence resulting from two-photon absorption or absorption of light of another harmonic. It also is possible that this spectral structure is due to luminescence of several defect centers which are formed when the crystal is irradiated by a laser beam. Large overlapping of absorption and luminescence spectra in the case of a single crystal can be associated with the fact that a crystal region which radiates is heated to a high temperature, or that luminescence is superposed by radiation with a continuous spectrum which penetrates through a layer of crystal. Orig. art. has: 1 figure.

ASSOCIATION: Insty*tut fizy*ky* AN URSR, Kiev (Institute of Physics, AN URSR)

Card 2/3

L 21699-65
ACCESSION NR: AP4048872

SUBMITTED: 18Jun64 ENCL: 00 SUB CODE: EC, OP

NO REF SOV: 001 OTHER: 002

Card 3/3

VAULIN, Yuriy Sergeyevich; KOLTUN, Sergey Ivanovich; LEVANOV, Aleksey Nikolayevich; KON'KOV, A.S., dotsent, retsenzent; KATS, I.S., inzh., red.; DUGINA, N.A., tekhn.red.

[Design and planned use of dies] Raschet i planirovanie shtampov. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1959. 93 p. (MIRA 12:12)

(Dies (Metalworking))

VATOULINA, A.I.

EXCERPTA MEDICA Sec 6 Vol 13/11 Internal Med. Nov 59

6226. THE INTRACRANIAL COMPLICATIONS OF BRUCELLOSIS (Russian text) - Vatoulina A.I. - ZH.NEVROPAT. I PSIKHIAT. 1958, 58/11 (1368-1370)

These complications, which often assume the form of meningitis or meningo-encephalitis, are often the first manifestations of brucellosis. There are no precise demarcations between the diseases mentioned; the process passes easily from the meninges to the cerebral parenchyma or vice versa. Meningitis and meningo-encephalitis of brucellar origin exhibit characteristics similar to those of tuberculous meningitis: (1) the cells in the CSF are mostly lymphocytes; (2) the course of the meningo-encephalitis and often also of the meningitis is associated with pathological modifications of the fundus of the eye and with choked disc; (3) after the clinical recovery of patients with meningitis and meningo-encephalitis, the lymphocyte count of the CSF persists for a certain period at a high level. The diagnostic studies are completed by a Heddelson test of the CSF. In intracranial sequelae of brucellosis, streptomycin has a favourable action. (L, 8, 6)

VATULINA, A.I.

Intracranial complications of brucellosis [with summary in French]. Zhur.nevr. i psikh. 85 no.11:1368-1370 N'58 (MIRA 12:1)

1. Nervnoye otdeleniye Tul'skoy gorodskoy bol'nitsy No.1 imeni N.A. Semashko (glavnyy vrach Ya.S. Stol'tser).
(BRUCELLOSIS, complications
meningitis & meningoencephalitis (Rus))
(MENINGITIS, etiology & pathogenesis
brucellosis (Rus))
(MENINGOENCEPHALITIS, etiology & pathogenesis
brucellosis (Rus))

VATULINA, M.

Control over estimates of administrative expenses and size of the staff. Fin. SSSR 16 no.2:48-50 F '55. (MLRA 8:1)
(Finance)

S/185/62/007/001/005/01.
D299/D302

AUTHOR: Vatul'ov, V.M.

TITLE: Absorption and luminescence of anthracene impurities in octahydroanthracene crystals at 20°K

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 7, no. 1, 1962, 37 - 43

TEXT: The absorption- and luminescence spectra of a solid solution of anthracene in octahydroanthracene are investigated. Their electronic-vibrational analysis is given. This investigation is related to two earlier ones by the author, in which the multiplet structure of the spectra of the above system and of the system anthracene-dihydroanthracene were studied. The experimental procedure is described. Results: Two resonance lines, observed in the absorption spectrum, were found to belong to 2 line-series of similar structure. The two resonance lines in the multiplet of purely electronic transitions are related to two independent spectra, shifted with respect to each other by 140 cm^{-1}; these spectra belong to two distinct types of im-

Card 1/3

purity centers, whose relative concentration changes as a function of anthracene concentration and the conditions of crystal growth. Simultaneous strengthening, weakening or complete disappearance of lines, belonging to the same series, was observed in both the absorption- and luminescence spectra, whereas the intensity of lines, belonging to different series, changes independently. With high anthracene-concentration (of the order of several percent), new impurity centers appear in the crystal. Their relative concentration is low and they have no appreciable effect on the absorption spectrum; yet they have a substantial role in the luminescence process. Analogous effects were observed by the author in earlier investigations with other solid solutions. Notwithstanding a slight broadening of lines in the impurity spectra, it is clearly evident that the structure of "lattice"-satellite groups, disposed mirror-symmetrically about the resonance lines, is entirely different for the 2 solvents -- dihydroanthracene and octahydroanthracene. Other investigators also observed (in other substances) mirror symmetry in multiplets of purely-electronic transition spectra. From a table it is evident that the frequency of intra-molecular vibrations of impurity molecules differs

Absorption and luminescence of anthracene S/185/62/007/001/005/014
D299/D302

little from solution to solution. There are 5 figures, 3 tables and 5 references: 4 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: Jerome M. Sidman, J. Chem. Phys., 25, no. 1, 115, 1956.

ASSOCIATION: Instytut fizyky AN URSR (Institute of Physics of the AS UkrRSR), Kyyiv

SUBMITTED: March 4, 1961

Card 3/3

ACC NR: AP6033528 SOURCE CODE: UR/0185/66/011/010/1151/1153

AUTHOR: Brodin, M. S.; Vatul'ov, V. M.; Kamuz, O. M.

ORG: Institute of Physics, AN UkrSSR, Kiev (Instytut fizyky AN UkrSSR)

TITLE: Self-focusing of light in NaCl crystals

SOURCE: Ukrayins'kyy fizychnyy zhurnal, v. 11, no. 10, 1966, 1151-1153

TOPIC TAGS: ruby laser, laser beam, laser optics, nonlinear optics, sodium chloride, cubic crystal

ABSTRACT: An investigation was made of special features of the broadening of a focused beam from a Q-switched ruby laser (power 10—15 Mw) in NaCl crystals. The investigation was carried out with the aim of observing self-focusing of light in a cubic crystal. A lens with a 5-cm focal length was used to focus the laser beam inside the crystal. The determination of self-focusing was made on the basis of the distribution of damage produced by the beam along its path and on the basis of photographs of the cross section of the laser beam taken from the face of the crystal. The damage produced by a Q-switched pulse differed in character and extent from that produced by a non-Q-switched pulse. Photographs showed damage scattered randomly between the boundaries of the laser beam and clear, straight lines which when enlarged resolved into dense damage of small size. These lines, which apparently belong to regions of increased intensity, can be observed ahead of the focal point, and in some

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L 0462-67

ACC NR: AP6033528

cases beyond the focal point. The shape of the beam deviates from the conical, and the generatrix departs from the straight line. Such a beam shape cannot be attributed to spherical aberration of the focusing lens. The increased refraction index in the field of the light wave apparently affects the shape of the beam. In the case of a sufficiently powerful beam the divergence was not observed. Damage appeared only in a channel region approximately 0.1 mm in diameter and 0.5 cm long. Such traces were observed at room temperature and when the NaCl crystal was cooled to 77K. In a crystal cooled to 77K the damage was most densely exposed at a point somewhat ahead of the focus. The traces were considerably smaller behind the focus, apparently as the result of the diminishing intensity of the light beam. The case for self-focusing is most convincing in photographs taken from the crystal face at a distance of 2 cm from the point of the focusing in the crystal. Orig. art. has: 2 figures.

SUB CODE: 20/ SUBM DATE: 30May66/ ORIG REF: 003/ OTH REF: 003/ ATD PRESS: 5100

Card 2/2 LC

USSR/Cultivated Plants - Commercial. Oil-Bearing. Sugar-Bearing. M-5

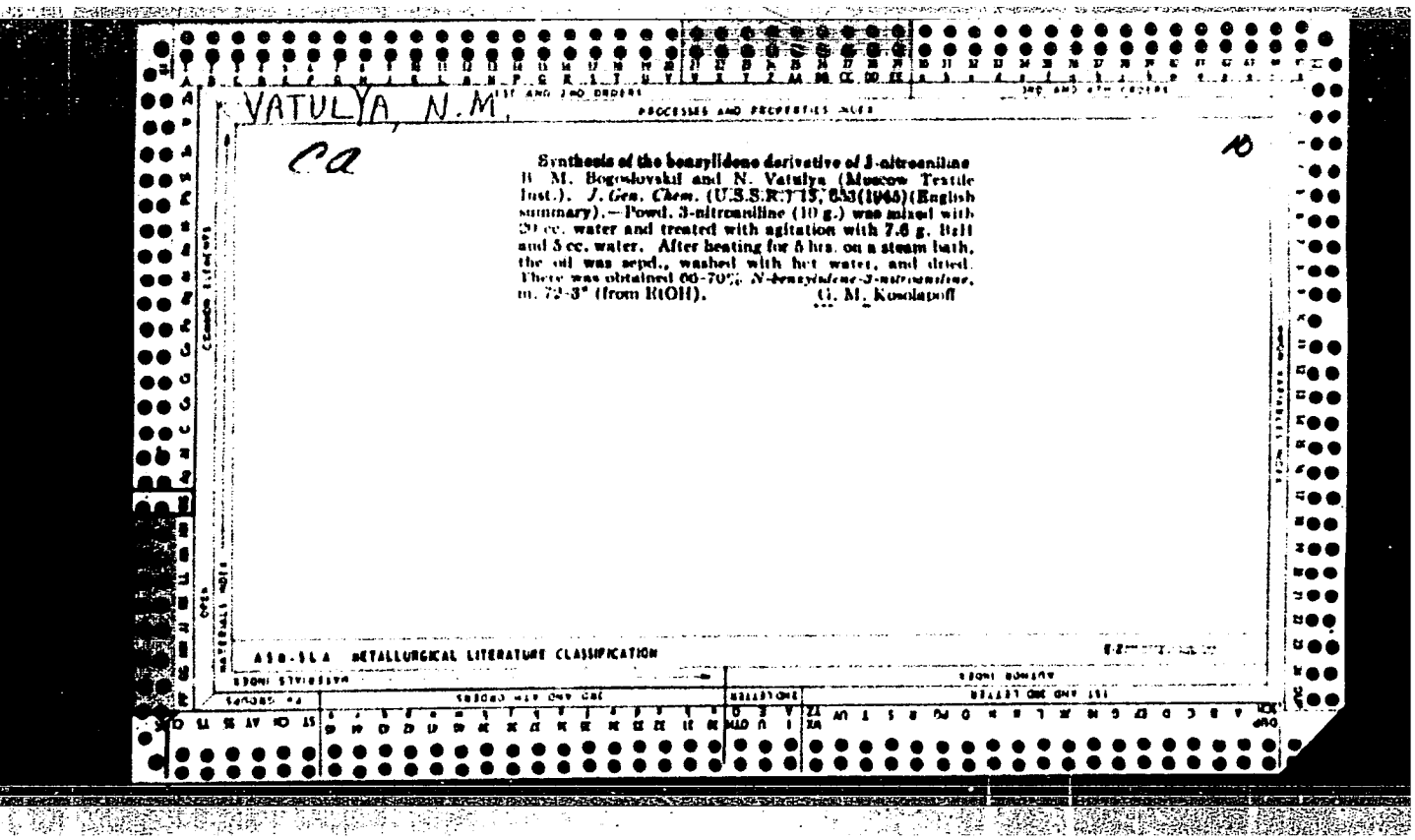
Abs Jour : Ref Zhur - Biol., No 7, 1958, 29946

Author : Rozhdestvenskiy, I.G., Vatulya, M.S.
Inst : -
Title : The Effectiveness of the Application of Fertilizers on the Sugar Beet.

Orig Pub : Kolgospnik Ukraini, 1957, No 4, 18-19 (Ukr.)

Abstract : It is recommended on the basis of agrochemical laboratory tests in the Kolkhozes of Khmel'nitskaya Oblast' and neighboring oblasts that manure be applied when winter wheat was the preceding crop, as well as on the fall plowing. The basic bulk of mineral fertilizers, especially phosphorus and potassium, must be placed on the autumn plowland. When the ground water stands high, nitrogen should be applied in the springtime.

Card 1/1



VATULYA, N.M.

Ca

Synthesis of the benzylidene derivative of 3-nitroaniline
B. M. Bogoslovskii and N. Vatulya (Moscow Textile Inst.). *J. Gen. Chem.* (U.S.S.R.) 15, 653(1945)(English summary).—Powd. 3-nitroaniline (10 g.) was mixed with 50 cc. water and treated with agitation with 7.6 g. BzH and 5 cc. water. After heating for 5 hrs. on a steam bath, the oil was sepd., washed with hot water, and dried. There was obtained 66–70% *N-benzylidene-3-nitroaniline*, m. 72–3° (from EtOH). G. M. Kosolapoff

10

A58-51A METALLURGICAL LITERATURE CLASSIFICATION

BA VATULYA, N. M

Irradiator. F. I. Sadov and N. M. Vatulya (*Tekst. prom.*, 1960, No. 4, 24).—An incomplete description is given of a device for exposing textiles to light from quartz lamps for fastness and degradation tests. A 50—60-fold shortening of exposure times is claimed in comparison with the use of known devices.

E. B. Uvarov.

L 08103-67 EWT(1) DD

ACC NR: AP6029995 SOURCE CODE: UR/0413/66/000/015/0197/0197

INVENTOR: Vatulya, N. M.; Lobanov, N. A.

ORG: none

TITLE: Parachute. Class 62, No. 184153

SOURCE: Izobret prom obraz tov zn, no. 15, 1966, 197

TOPIC TAGS: parachute, parachute packing

ABSTRACT: This Author Certificate introduces a parachute with canopy and shroud lines. To reduce the chance of entangling the parachute in the shroud lines during its opening, as the lines are folded into the pack they are held with elastic bands and secured either singly or several lines together; they are released one by one at the moment they are pulled to their full length. Orig. art. has: 1 figure. [SA]

SUB CODE: 01/ SUBM DATE: 05Oct54

Card 1/1

UDC: 629.13.01/.06

VATULYA, Ye. Ye.

USSR/Cultivated Plants. Grains. II

Abs Jour : Ref Zhur-Biol., No 15, 1958, 68085

Author : Kuchumov, P. V., Vatulya, Ye. Ye.
Inst : -
Title : Winter Wheat of Gordeiform 46.

Orig Pub : Selektsiya i semenovodstvo, 1957, No 4, 39-41

Abstract : A description of a new variety which has just been submitted for state testing is given here. This variety was obtained by inter-species hybridization of Tr. turgidum x Tr. diccocum. The prospects are pointed out of using Tr. diccocum as a paternal plant by crossing it with cultivated species. Gordeiform 46 gave the highest yields in the irrigated regions of southern Ukraine, and in state testing it exceeded many hard wheat varieties in yields.

Card : 1/2

USSR/Cultivated Plants. Grains.

Abs Jour : Ref Zhur-Biol., No 15, 1958, 66085

When tested in the southern oblast's of the USSR, it proved resistant to high temperatures; in Chkalov and Eastern Kazakhstan oblast's, it yielded more than 40 centners per hectare. -- I. N. Zaikina

Card : 2/2

11

S/044/62/000/005/042/072
C111/C444

AUTHOR: Vatul'yan, A. Kh

TITLE: The application of the mixed (matrice)-method for the solution of integro-differential equations on the problem of the dynamic stability of the bars

PERIODICAL: Referativnyy zhurnal, Matematika, no. 5, 1962, 38, abstract 5V183. (Tr. Novocherk. politekhn. in-ta," 1961, 117, 51-71)

TEXT: A general scheme for the solution of dynamic problems of stability for bars of arbitrary cross section is given by aid of the mixed (matrice) method. The author notes that the method possesses sufficient exactness, it does not demand the determination of the fundamental functions of the problem and is rather simple.

[Abstracter's note: Complete translation.]

Card 1/1

VATUL'YAN, A.Kh.

Application of the method of mixed matrices to the solution of problems of stability of rods during the action of tracing loads. (MIRA 16:10)
Trudy NPI 136:73-84 '63.

(Stability) (Elastic rods and wires)

VATUL'YAN, A.Kh.

Problem of the convergence and comparative characteristics of the method of mixed matrices and the method of elastic loads. (MIRA 16:10)
Trudy NPI 136:97-109 '63.

(Convergence) (Mechanics, Applied)

VATUL'YAN, A.Kh.

Using the method of mixed matrices for calculating bands for dynamic stability. Trudy NPI 147:87-100 '63. (MIRA 17:3)

L 43727-65 EWT(d)/EWT(m)/EWP(w)/EWI(v)/T-2/EWP(k)/EWA(h) Pf-4/Peb
ACCESSION NR: AR5009488 IJP(c) EI S/0124/65/000/003/V024/V024

SOURCE: Ref. zh. Mekhanika, Abs. 3V162

AUTHOR: Vatul'yan, A.Kh.

TITLE: Application of the mixed matrix method to the problem of the dynamic stability of beam columns

CITED SOURCE: Tr. Novocherk. politekhn. in-ta, v. 153, 1964, 29-34

TOPIC TAGS: beam column, primary instability area, dynamic stability calculation, Vlasov equation, mixed matrix method

TRANSLATION: The author defines the boundaries of the primary area of dynamic instability in cantilevered or hinge-supported beam columns which carry an adequately arbitrary load in the plane of least rigidity (plane of symmetry). The inertia of rotation of beam crosssections and the axial point displacement are ignored in calculating boundaries of the primary area of instability. The author based his considerations on equation authored by V.Z. Vlasov. He obtained a mixed system of equations, one integro-differential and the other differential. Written in matrix form, the system leads to a differential equation of the second order with periodic coefficients for the vector of bending moments

Card 1/2

L 43727-65
ACCESSION NR: AR5009488

0

from the plane of least rigidity. A frequency equation is evolved for a beam of constant cross section, free of axial stress but subject to a transverse load applied along the axis of mass centers. An example is cited. It is shown that an error on the order of 30% results in calculations of boundaries of the primary instability area when the in- of the focused load and the beam's own weight are ignored. Yu. A. Kublin

SUB CODE: LE, AS ENCL: 00

Card 2/2

KARAGEZYAN, M.A., kand. med. nauk; NESTEROVA, V.P.; VATUL'YAN, K.A.

Prevention of occupational dermatoses in workers of the Krasnodar Plant of Measuring Instruments. Nauch. trudy Kub. gos. med. inst. 19:40-47 '62. (MIRA 17:8)

1. Iz kafedry kozhnykh i venericheskikh bolezney (zaveduyushchiy - prof. L.A. Neradov) Kubanskogo gosudarstvennogo meditsinskogo instituta.

KUZNETSOV, V.I.; VATULYAN, K.S.

Syntheses of first alicyclic compounds. Trudy Inst.ist.est.i tekh. 39:212-221 '62. (MIRA 16:2)
(Cyclic compounds)

VATUSHCHEV-TARASOV, S. D.

FA 15/49T77

USSR/Geological Prospecting
Ore Deposits

Sep 48

"Perspectives of the Ore Deposits of the Eastern Urals," S. D. Vatushchev-Tarasov, 2 pp

"Gor Zhur" No 9

Names several Ural areas in which additional geological prospecting is needed.

FDB

15/49T77

USSR/Geological Prospecting Sep 48
Ore Deposits

"Perspectives of the Ore Deposits of the Eastern Urals," S. D. Vatushchev-Tarasov, 2 pp

"Gor Zhur" No 9

Names several Ural areas in which additional geological prospecting is needed.

FDB 15/49277

VATUTIN, Fedor Yegorovich; MARKOVA, S.E., red.

[Along the path of intensification] Po puti intensifikatsii. Khabarovsk, Khabarovskoe knizhnoe izd-vo, 1964. 29 p. (MIRA 18:3)

1. Predsedatel' kolkhoza "Trudovaya niva" Leninskogo rayona Yevreyskoy avtonomnoy oblasti (for Vatutin).

VATUTIN, P I

25(1) PHASE I BOOK EXPLOITATION SOV/1327

Ostrenko, Viktor Yakovlevich, and Petr Ivanovich Vatutin

Proizvodstvo trub na avtomaticheskikh ustanovkakh (Tube Production in Automated Mills) Kharkov, Metallurgizdat, 1958. 133 p. 3,100 copies printed.

Resp. Ed.: Plyatskovskiy, O.A.; Ed. of Publishing House: Sinyavskaya, Ye. K.; Tech. Ed.: Andreyev, S.P.

PURPOSE: This book is intended for engineers and technicians working in the tube-manufacturing industry and may be useful to students at metallurgical vuzes.

COVERAGE: The problems of seamless steel tube production in automated mills are analyzed. The principles of roll and equipment design for all the mill stands are explained in detail. An analysis of the influence of the design elements on the rolling process is

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Tube Production in Automated Mills SOV/1327

presented, and a comparison of various types of equipment for piercing mills is given. Methods of setting up tube mills are described in detail and all possible troubles encountered in tube production are discussed. All operations of the manufacturing process are described in succession and methods of flow sheet design for tube manufacture are explained. Tube rejects, their causes and methods for their prevention and elimination are discussed. Information on modern tube production technique is included. The authors state that 65 percent of all tubes are manufacutred by the seamless process. The names of Doctor of Technical Sciences I.A. Ponischev, of P.K. Teterin, O.A. Plyatsovskiy, P.T. Yemel'yanenko and L.E. Al'shevskiy are mentioned in the text as having contributed to this field. There are 16 Soviet references.

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Tube Production in Automated Mills SOV/1327

AVAILABLE: Library of Congress

GO/ksv
4-29-59

Card 5/5

OSTRENKO, V. Ya., kand. tekhn. nauk; VATUTIN, P.I., inzh.

Improving the quality of seamless pipes. Biul. TSNIICHM no. 8:32-35 '58. (MIRA 11:7)
(Pipe)
(Rolling(Metalwork))

S/137/62/000/004/072/201
A052/A101

AUTHORS: Fomichev, I. A., Vatutin, P. I., Ostrenko, V. Ya., Mironov, Yu. M.

TITLE: The outlook for raising precision of hot-rolled pipes

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 4, 1962, 38, abstract 4D218 ("Sb. nauchno-tekhn. tr. N.-i.in-ta metallurgii Chelyab. sovnarkhoza", no. 3, 1961, 104-107)

TEXT: Some results are presented of an investigation carried out on a number of pipe mills with the purpose of producing seamless pipes with a high D/S ratio. The tests confirmed the theoretical thesis on the effectiveness of producing finished pipes on skewed rolling mills rather than on automatic mills. A modernized schematic diagram of automatic mills and a layout of equipment of the new automatic mills being designed are given.

A. Leont'yev

[Abstracter's note: Complete translation]

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S/137/62/000/003/086/191
A006/A101

AUTHOR: Vatutin, P.I.

TITLE: Geometry of the deformation seat during piercing on a roll mill

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 3, 1962, 29, abstract 3D158 ("Sb. nauchno-tekhn. tr. N.-i. in-t metallurgii Chelyab. sovnarkhoza", 1961, no. 3, 108 - 115)

TEXT: For the correct determination of the reduction of blanks and of the dimensions of rulers on a piercing mill, it is necessary to know the size of the deformation seat slit along the piercing axis, which vary depending on the roll calibration and the feed angle α. With a greater feed angle α, the size of the deformation seat slit increases along the piercing axis. For the correct calibration of the ruler groove it is necessary to know the deformation seat shape in the cross section, which is determined by the radius of curvature of the deformation seat ρ and the distance between the rulers over the crest along the deformation seat. The distance between the rulers in the tear-away section of the sleeve from the mandrel is equal to the slit size plus the magnitude of flattening.
[Abstracter's note: Complete translation] K. Ursova

Card 1/1

S/137/62/000/003/085/191
A006/A101

AUTHOR: Vatutin, P.I.

TITLE: Calculcating the calibration of a piercing mill and testing the experimental calibration with 0° angle of the delivery cone

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 3, 1962, 29, abstract 3D157 ("Sb. nauchno-tekhn. tr. N.-i. in-t metallurgii Chelyab. sovnarkhoza", 1961, no. 3, 116 - 123)

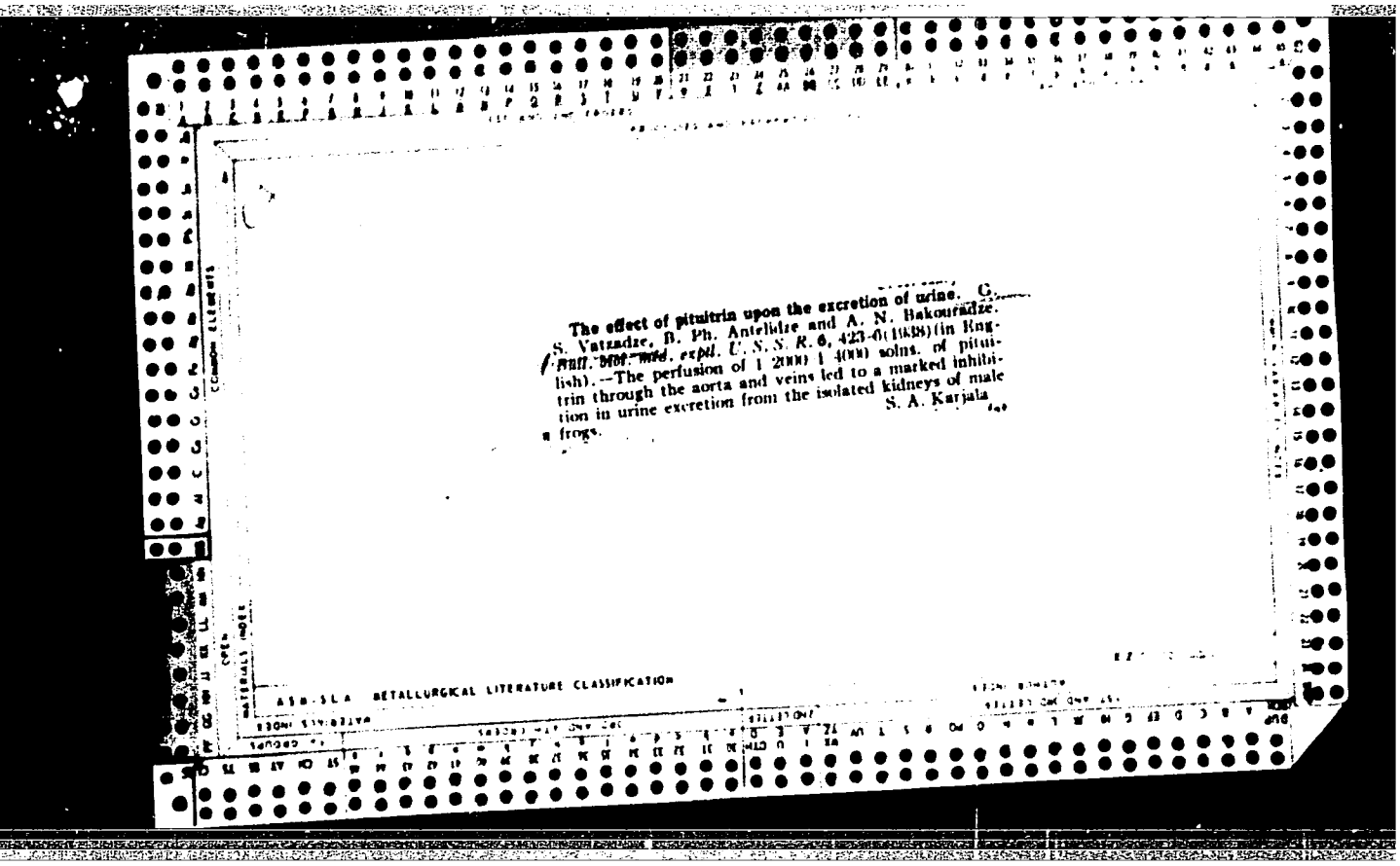
TEXT: The proposed calibration of rolls and tools of a piercing mill is simple and reliable, and ensures high efficiency of the mill operation. The use of rolls with a minimum angle of the delivery cone of 0° ensures a reduction of pipe defects by about twice. The magnitude of the coefficient of slip, characteristic of the speed conditions of the piercing process, was raised by 6.4 - 46%. The power for different cases of piercing increased by 2.2 - 33%, and specific power consumption decreased by 3.3 - 44%. The experiments performed make it possible to recommend for introduction to the industry the calibration of piercing mill rolls, assuring the production of the required sleeves with minimum angle of the delivery cone, down to a cylinder.
[Abstracter's note: Complete translation] K. Ursova

Card 1/1

VATULYA, M.N.; NAVARENKO, V.S.; SKPITYY, V.T.; SEREDIN, Ye.G.; KASHUBA, B.P., glavnyy konstruktor; UVAROVA, A.F., tekhn.red.

[Catalog of parts of DT-14, DT-14A, and DT-14B tractors] Katalog detalei traktorov DT-14, DT-14A, DT-14B. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1959. 185 p. (MIRA 12:9)

1. Khar'kovskiy traktorosborochnyy zavod. 2. Rabotniki Otdela glavnogo konstruktora Khar'kovskogo traktorosborochnogo zavoda (for Vatulya, Navarenko, Sepityy, Seredin). 3. Khar'kovskiy traktorosborochnyy zavod (for Kashuba).
(Tractors--Catalogs)



The effect of pituitrin upon the excretion of urine. G. S. Vatzadze, B. Ph. Antelidze and A. N. Bakouradze. *Bull. Mém. méd. expl. U. S. S. R.* 6, 423-6 (1938) (in English).—The perfusion of 1:2000 1:4000 solns. of pituitrin through the aorta and veins led to a marked inhibition in urine excretion from the isolated kidneys of male frogs.

S. A. Karjala

A-3
7

BC

[illegible] of some [illegible] of [illegible] forms of [illegible] behaviour. E. G. Vatsuro (J. Physiol. USSR, 1950, [illegible]). [illegible] D. H. Smyth.
Criticism of contemporary Russian views. [illegible]

VAU, E.

[illegible] Tekhver; on his 60th birthday. Arkh. anat. gist. i embr. 40 no. 1:126-127 Ja '61. ([illegible])
(TEHVER, JULIUS, 1900-)

USSR / Farm Animals. Cattle. Q-2

Abs Jour : Ref Zhur - Biil., No 14, 1958, No 64467

Author : Vau, E.
Inst : Estonian Agricultural Academy
Title : Development of Veins in Cows' Udder During the Uterine Period.

Orig Pub : Eosti Pollumaj. akad. teaduslike toode kogumik; Sb. nauch. tr. Est. s. kh. akad., 1957, 3, 225-232

Abstract : The development of the subcutaneous abdominal vein (SAV) and the interosseal vein (IV) was traced in 27 foetuses, 2-8 months old. In 2 months old foetus, the SAV was not yet formed. At 3 months, the branches of the cranial vein of the udder and the interior thoracic vein unite and form the SAV and a branch of the caudal vein of the udder and the IV anastomose with one another. Thus, in 2 months old feotus, the exterior pudendal vein is the only way for the reflux of the blood from the udder region, and in a foetus 3 months old, the SAV and IV are added to it.

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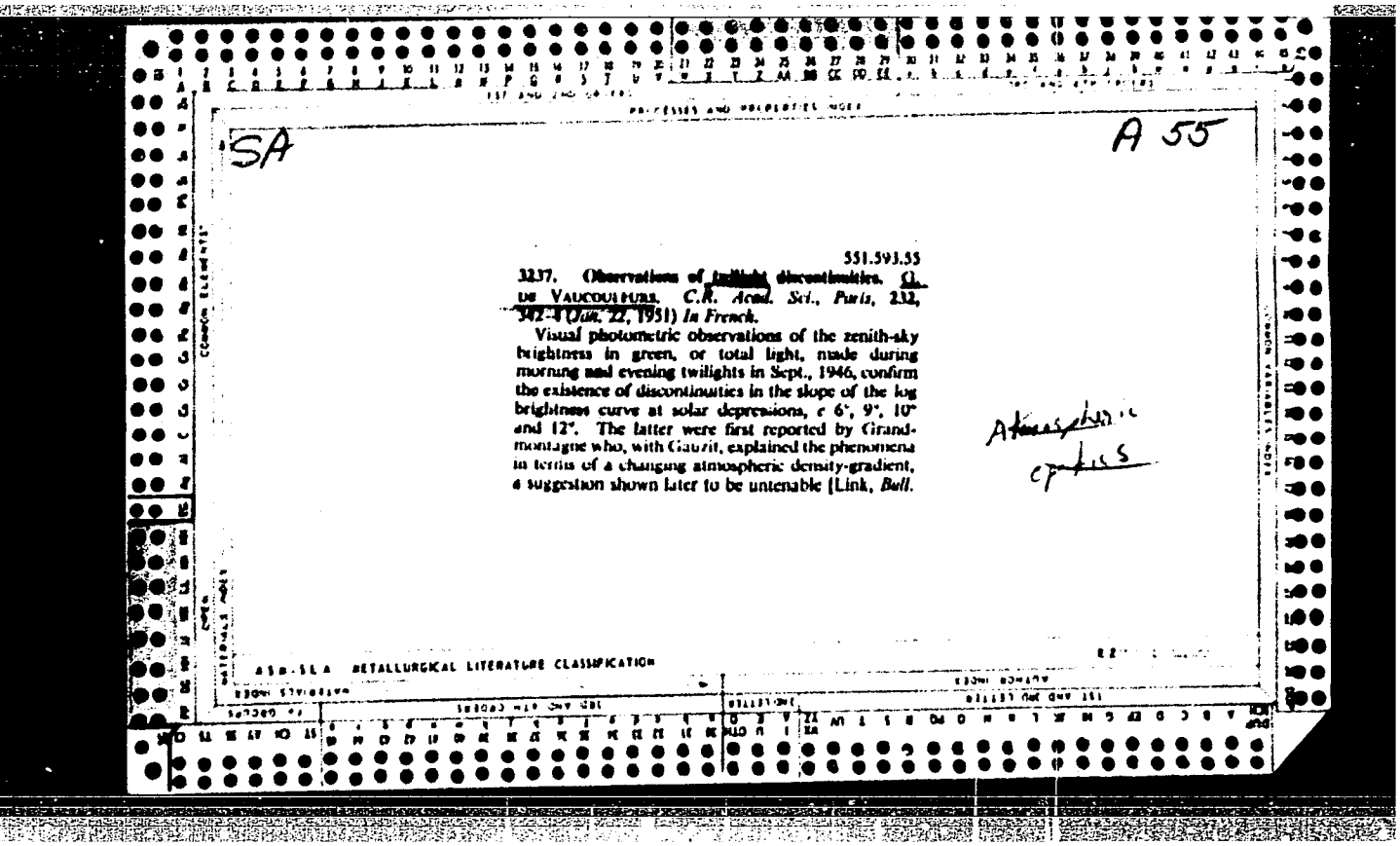

SA

A 55

551.593.55

3237. (Observations of twilight discontinuities. G. DE VAUCOULEURS. *C.R. Acad. Sci., Paris*, 232, 342–4 (Jan. 22, 1951)) *In French.*

Visual photometric observations of the zenith-sky brightness in green, or total light, made during morning and evening twilights in Sept., 1946, confirm the existence of discontinuities in the slope of the log brightness curve at solar depressions, c 6°, 9°, 10° and 12°. The latter were first reported by Grandmontagne who, with Gauzit, explained the phenomena in terms of a changing atmospheric density-gradient, a suggestion shown later to be untenable [Link, *Bull.*

Atmospheric optics

A5B-5LA METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

Floor tile from brick clays of high iron content. P. K. Vaulin and A. A. Novopashin. *Keramika* 1939, No. 5, 30-4.—Batches prepd. from mixts. of clays high in Fe required longer firing than normal. Semiplant results indicate the necessity of addnl. research, in order to improve the process. F. P. Stefanowsky

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

VAJK, P.

Ernst Cotel, 1879-1954; an obituary. p. 529.

(KAHASZATI LAPOK, Budapest, Vol. 9, no. 12, Dec. 1954.)

East

SO: Monthly list of European Accessions, (EEAL), LC, vol. 4, no. 1, Jan. 1955, Uncl.

L 23087-66 EWT(1)/EWA(h) GG

ACC NR: AP6011204 SOURCE CODE: UR/0413/66/000/006/0038/0038

INVENTOR: Vaulin, A. M.; Kholodilov, N. N.; Sotkov, V. Ya.; Putchkov, Ye. V.

ORG: none

TITLE: Coaxial shf switch. Class 21, No. 179804

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 6, 1966, 38

TOPIC TAGS: electronic switch, switching circuit, high power switch, SHF

ABSTRACT: An Author Certificate has been issued for a coaxial shf switch. To increase the decoupling between the channels, the switch is provided with a rotating metal shield in the form of an open cylinder. The shield screens the side channels and is actuated by a Γ-shaped conductor. The shield is spring mounted, and its external surface is polished and coated with a highly wear-resistant metal, e.g., palladium. Orig. art. has: 1 figure. [KM]

SUB CODE: 09/ SUBM DATE: 13Jul64/ ATD PRESS: 4234

Card 1/1

VAULIN, G. V.

VAULIN, G. V.: "A comparative evaluation of certain methods of filling bone cavities". Makhachkala, 1955. Voronezh State Medical Inst. Dagestan State Medical Inst. (Dissertations for the degree of Candidate of Medical Science.)

SO: Knizhnaya Letopis' No. 50 10 December 1955. Moscow.

VAULIN, I. G.

Preparation of feeding stuffs for animals. Sverdlovsk obl. gos. izd-vo. 1950.
42p.

1. Feeding and feeding stuffs.

VARGIN, V.V., prof., doktor tekhn.nauk; ANTONOVA, Ye.A., kand.tekhn.nauk; GUTOROVA, L.L., starshiy nauchnyy sotrudnik; LITVINOVA, Ye.I., kand.tekhn.nauk; LUCHINSKIY, V.V., inzh.; MAZUREK, Yu.V., kand. tekhn.nauk; SENDEROVICH, V.Ya., kand.tekhn.nauk; SEREBRYAKOVA, M.V., nauchnyy sotrudnik; BELYAYEV, G.I., dotsent, kand.tekhn. nauk, retsenzent; VAULIN, V.P., kand.tekhn.nauk, retsenzent; GOMOZOVA, N.A., red.izd-va; EL'KINA, E.M., tekhn.red.; MEDVEDEV, L.Ya., tekhn.red.

[Technology of enamels and the enameling of metals] Tekhnologiia emali i emalirovaniia metallov. Pod red. V.V.Vargina. Moskva, Gos.izd-vo lit-ry po stroit., arkhit., i stroit.materialam, 1958. 393 p. (MIRA 12:3)

1. Zaveduyushchiy kafedroy tekhnologii silikatov Dnepropetrovskogo khimiko-tekhnologicheskogo instituta (for Belyayev).
(Enamels and enameling)

VARGIN V.V.

15(2) P. 2

AUTHOR: Vargin, V.V. SOV/72-58-12-22/23

TITLE: Conference on Enamels and Metal Enameling
(Soveshchaniye po emalyam i emalirovaniyu metallov)

PERIODICAL: Steklo i keramika, 1958, Nr 12, pp 47-48 (USSR)

ABSTRACT: The organizers of the conference were: Leningradskoye oblastnoye nauchno-tekhnicheskoye obshchestvo promyshlennosti stroitel'nykh materialov (Leningrad Oblast Scientific and Technical Society of the Industry of Building Materials); Leningradskiy sovnarkhoz (Leningrad Council of National Economy) and Leningradskiy tekhnologicheskiy institut imeni Lensoveta (LTI) (Leningrad Technological Institute imeni Lensovet (LTI). The program of the conference included: the most important problems of enamel synthesis, enameling of metal products and industrial apparatus. About 250 experts took part in the conference: representatives from works in the UkrSSR, Ural, Novosibirsk, Ulan-Ude, Kuznetsk, Dzerzhinsk, as well as functionaries of the universities, of the scientific research and design institutes in Leningrad, Moscow, Novocherkassk, Dnepropetrovsk, Sverdlovsk, Riga, Khar'kov,and other towns. More than 40 reports were given and discussed. Professor K.S. Yevstrop'yev, director of the LTI imeni Lensovet, in his opening speech stressed the great economic importance of the problem of enameling

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metal products and apparatus.
Besides, the following lectures were given:
V.V. Vargin (LTI imeni Lensovet) reported on the development in the enameling industry.
K.P. Azarov, S.I. Goncharov, Novocherkasskiy politekhnicheskiy institut (Novocherkassk Polytechnical Institute), reported on mechanization in the manufacture of enameled products.
V.P. Vaulin (Giprosteklo) spoke on mechanization in the manufacture of sanitary-technical products.
Ye.I. Litvinova (LTI imeni Lensovet) reported on the influence of metal quality on the formation of "fish-scales" in enameling.
A.A. Appen, Institut khimii silikatov AN SSSR (Institute of Silicate Chemistry of the AS USSR), spoke on the present stage of the problems of calculating the properties of glass and enamels according to their composition.
M.V. Serebryakova (LTI imeni Lensovet) gave a survey of foreign literature on enamels and metal enameling.
M.N. Lifshits, Nauchno-issledovatel'skiy institut sanitarnoy tekhniki (Scientific Research Institute of Sanitary Engineering) reported on the enameling of products in the electric field of a corona discharge.
I.G. Petrunya, Luganskiy zavod imeni Artema (Luganskiy Works im. Artema)

spoke of new types of enameled steel products made in this factory.
Yu.P. Nikitin, Ural'skiy politekhnicheskiy institut (Ural'skiy Polytechnical Institute) reported on the character of interaction between metals and melted enamels.
N.S. Smirnov, Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov (Ural'skiy Scientific Research Institute of Ferrous Metals) reported on the influence of the condition of the steel surface on the formation of the enamel coat.
A.I. Borisenko, Institute of Silicate Chemistry of the AS USSR, spoke on the new method of obtaining thin silicate coats of semi-colloid solutions.
Ye.N. Podkletnov spoke on a new enameling method with heating of the products by high-frequency currents.
P.A. Rozhdestvenskiy, Lys'venskiy metallurgicheskiy zavod (Lys'venskiy Metallurgic Works) gave informations on new enamels used by the factory.
T.I. Polyubash, Novosibirskiy metallurgicheskiy zavod (Novosibirskiy Metallurgic Works) reported on the dependence of the moistening angle and the enamel deliquescence on the correlation of boric and non-boric silts.

P.G. Pauksh, Latviyskiy gosudarstvennyy universitet (Latvian State University) reported on the investigation of fritted prime enamels for coating cast iron.
V.Ya. Lokshin, Scientific Research Institute of Sanitary Engineering, spoke on the influence of chemical composition on some properties of easily fusible powder enamels.
By the LTI imeni Lensovet the following reports were given:
L.L. Gutorova on prime-less steel and aluminum enameling.
M.V. Serebryakova on non-plumbic silicate enamels for aluminum.
G.A. Kudryavtseva on slightly colored antimony enamels.
Yu.V. Mazurek on the investigation of a systematic series of oxides for obtaining blue and brown pigments.
The Novocherkassk Polytechnical Institute gave the following reports:
K.P. Azarov on new methods of enamel testing, and on the influence of iron oxide on the physico-chemical properties of the prime coat.
V.G. Zerin on the importance of the gas phase in the burning process of the prime coat.
Ye.M. Chistova on phosphate enamels.
Ye.I. Podroykina on prime-less coats.
Collaborators of the Dnepropetrovsk Chemical-Technological Institute reported:

G.I. Belyayev on the acid content and basicity of enamels, and on

the influence of the composition on some properties of prime enamels.
Yu.D. Barinov on the damping of enamels by antimony.
L.V. Purin, Leningradskiy khimiko-pishchevoy kombinat (Leningrad Chemical Foodstuff Kombinat) and S.I. Solyanik (NIIKhIMMASh) on the experiment of manufacturing enameled chemical apparatus of steel.
A.M. Semenova spoke on the causes of blistering of prime enamels at the Zaporozhskiy "metiznyy" zavod (Zaporozh'ye "Metiznyy" Works) and the methods of preventing this fault.
V.I. Savchenko, Luganskiy Works imeni Artem, reported on the successful application of vibration grinding for crushing sand and non-boric enamel layers, as well as on the experiment of using white titanium enamels.
V.G. Zuyev reported on the improvement in the burning technology of enamel coats in connection with the change-over of furnaces to gas, as well as on prospects of muffle-less burning.
V.A. Oborin reported on the work of the design office of the enamel manufacture at the Lys'venskiy Metallurgic Works.
D.I. Yegorov, representative of the State Office for Planned Economy, on the planned production volume for the next years, as well as on the standard specifications of borax consumption provided.

Conference on Enamels and Metal Enameling SOV/72-58-12-22/23

The members of the conference passed resolutions for obtaining an improvement in the quality of enameled products, as well as for increasing their production and creating a new technology and new production methods.

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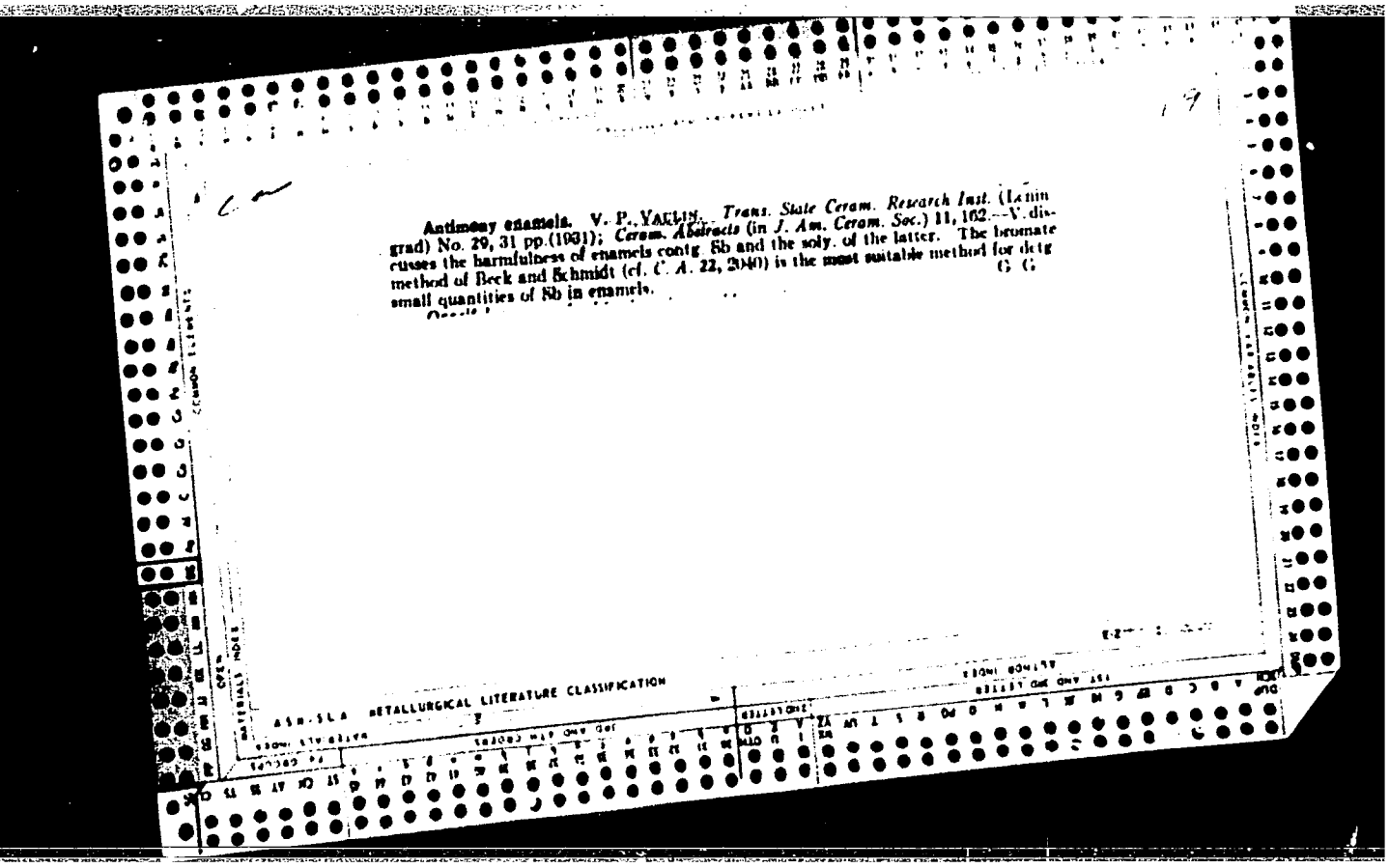

Antimony enamels. V. P. YAKLIN. *Trans. State Ceram. Research Inst.* (Leningrad) No. 29, 31 pp.(1931); *Ceram. Abstracts* (in *J. Am. Ceram. Soc.*) 11, 162.—V. discusses the harmfulness of enamels contg. Sb and the soly. of the latter. The bromate method of Beck and Schmidt (cf. *C. A.* 22, 2040) is the most suitable method for detg. small quantities of Sb in enamels.

VAULIN, V. P.

PHASE I BOOK EXPLOITATION SOV/6060

Vargin, V. V., Professor, ed.

Emalirovaniye metallicheskikh izdeliy (Enameling of Metal Articles). Moscow, Mashgiz, 1962. 546 p. Errata slip inserted. 7500 copies printed.

Reviewer: A. S. Ragozin, Engineer; Ed.: M. V. Serebryakova, Engineer; Eds. of Publishing House: I. A. Borodulina, A. I. Varkovetskaya, and T. L. Leykina; Tech. Ed.: L. V. Shchetinina; Managing Ed. for Literature on Machinery Manufacture (Leningrad Division, Mashgiz): Ye. P. Naumov, Engineer.

PURPOSE: This book is intended for specialists in enameling, technical personnel of plants, and personnel of scientific research laboratories and institutes. It can also be used by teachers and students of schools of higher education.

COVERAGE: The book provides a brief discussion on raw materials and processes for melting enamels, describes in detail furnaces for melting enamels,

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and offers some recommendations for selection and calculation of furnaces. A special section [Ch. IV, sect. 8] on heat-resistant coatings is included. A flowsheet is given for centralized production of enamels. The properties and preparation of slips are also comprehensively described. The production of new enameled products such as pipelines, architectural and building materials, and aluminum articles is described. Individual chapters were written both by plant personnel and by technical personnel of scientific research institutes and schools of higher eduction. [See: Table of Contents.] No personalities are mentioned. There are 638 references, mainly Soviet, with many English and some German.

TABLE OF CONTENTS [Abridged]:

Enameling of Metal Articles SOV/6060

PART I. ENAMELING TECHNOLOGY

PART II. THE TECHNOLOGY OF ENAMELING METAL ARTICLES

Enameling of Metal Articles SOV/6060

AVAILABLE: Library of Congress
SUBJECT: Metals and Metallurgy

Card 4/4

BN/pw/jk
10-31-62

KURGUZOV, I.S.[Kurhuzov, I.S.]; VAULIN, Ye.O. [Vaulin, IE.O.]

Use of butt rmilk in the manufacture of sweet condensed milk. Khar. prom. no.1:64 Ja-Mr '65. (MIRA 13:4)

Vaulin, Ye. P.

57-27-7-13/40

AUTHOR: Vaulin, Ye. P.

TITLE: On the Temperature of a Flat Plate in a Flow of Reacting Gas Mixture (O temperature ploskoy plastinki, obtekayemoy reagiruyushchey gazovoy smes'yu)

PERIODICAL: Zhurnal Tekhnicheskoy Fiziki, 1957, Vol. 27, Nr 7, pp. 1503 - 1509 (USSR)

ABSTRACT: The problem of the temperature of a flat disk flown around by a steady laminar flow of gas (in which a reaction of the type $N_2 \rightarrow 2N$ takes place) is investigated. The problem is reduced to the solution of the boundary-layer equations and a full set of boundary-layer equations is set up for the case of the flow of the reaction-gas-mixture along the flat disk: the equation for the diffusion, the equation for the continuity, the equation for the conservation of the momentum and the equation for the energy conservation. In the case of mixtures in which the molecular weight of the components does not much differ from the average molecular weight of the mixture the Prandtl temperature-coefficient and the Prandtl diffusion-number may be assumed as independent of temperature. But in this problem the dependence of the physical properties of the mixture on temperature are taken into account and at this the de-

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57-27-7-13/40

On the Temperature of a Flat Plate in a Flow of Reacting Gas Mixture

pendence, according to the exponential law, of the viscosity on the temperature is applied. The case is here investigated where the linear law (power n = 1) holds for the dependence of the viscosity on temperature. The variables of Dorodnitsyn are made use of and the solution of the set of equations of the boundary-layer for the reaction-mixture is obtained by the consecutive solutions of the dynamic, the thermal and the diffusion problems. There are 5 references, 4 of which are Soviet.

ASSOCIATION: Moscow State University
(Moskovskiy gosudarstvennyy universitet)

SUBMITTED: November 27, 1956

AVAILABLE: Library of Congress

1. Boundary layer-Temperature factors-Mathematical analysis
2. Plates-Boundary layer

Card 2/2

20-6-13/59

AUTHOR VAULIN, Ye.P.

TITLE On the Stabilized Temperature of a Plane Plate Circulated by a Reacting Gas Mixture. (Ob ustanovivsheyesya temperature ploskoy plastiny, obtekayemoy reagiruyushchey gazovoy smes'yu.- Russian.)

PERIODICAL Doklady Akademii Nauk SSSR 1957, Vol 113, Nr 6, pp 1235-1238 (USSR)

ABSTRACT In the gas flow investigated in the paper under review there takes place a reaction of the type $X_2 \rightarrow 2X$. The sought temperature is found by solving the system of equations of the boundary layer. The following system of the equations of the boundary layer can be written down, in the case considered in the paper under review, in the following way: Diffusion equation for the initial product of the reaction

$$\varrho\left(u_1 \frac{\partial c_1}{\partial x_1} + u_2 \frac{\partial c_1}{\partial x_2}\right) = \frac{\partial}{\partial x_2}\left(\varrho D \frac{\partial c_1}{\partial x_2}\right) - \varrho Z_1 \quad ;$$

equation of continuity

$$\partial(\varrho u_1)/\partial x_1 + \partial(\varrho u_2)/\partial x_2 = 0 \quad ;$$

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On the Stabilized Temperature of a Plane Plate Circulated by a Reacting Gas Mixture. 20-6-13/59

equation of conservation of momentum

$$\rho(u_1(\partial u_1/\partial x_1)+u_2(\partial u_1/\partial x_2)) = (\partial/\partial x_2)(\eta(\partial u_1/\partial x_2))$$

equation of conservation of energy

$$\varrho\left(u_1\frac{\partial(c_Q\theta)}{\partial x_1}+u_2\frac{\partial(c_Q\theta)}{\partial x_2}\right)=\frac{\partial}{\partial x_2}\left(\lambda\frac{\partial T}{\partial x_2}+\eta u_1\frac{\partial u_1}{\partial x_2}+qQD\frac{\partial c_1}{\partial x_2}\right);$$

$c_1 + c_2 = 1$; $p = RQT$. In this context we have

$$\theta = T + (1/2)(u_1^2/c_p) + (q/c_p)c_1;$$

and the following symbols are used: ϱ - density of the mixture; T - temperature of the mixture; u_1, u_2 - the components of the velocity of flow in the boundary layer; $c_1 = \varrho_1/\varrho$ - the concentration of the initial product of the reaction; ϱ_1 - density of the component X_2; c_2 - density of the products of the reaction; D - coefficient of diffusion of the component X_2; η-coefficient of viscosity; λ-coefficient of heat conductance; QZ_1 - velocity of reaction; q - heat tone of the reaction; c_p - heat capacity of the mixture at constant pressure; p - pressure of the mixture.

CARD 2/3

On the Stabilized Temperature of a Plane Plate Circulated by a Reacting Gas Mixture.

20-6-13/59

In the paper under review, its author deals with the general case with respect to the Prandtl numbers. Furthermore the author presupposes a heterogeneous reaction which takes place in the domain of diffusion. The above-mentioned equations are specialized for this case. The boundary conditions and the solution ansatzes for this system are given. The formulae (derived by means of these solution ansatzes) for the temperature distribution and for the temperature (which has become stationary) of the plane plate are given. This formula can be employed also in case of high velocities and in the case where the frictional heat can be compared, with respect to its order of magnitude, with the heat created at the chemical reaction. The paper under review also derives the distributions of the concentrations and of the temperatures for the reaction taking place in the domain of diffusion.

ASSOCIATION: Moscow State University
PRESENTED BY: N.N. BOGOLYUBOV, Member of the Academy, 13.12. 1956
SUBMITTED: 9.12. 1956
AVAILABLE: Library of Congress.
CARD 3/3

BAULIN, Ye. P., Cand Phys-Math Sci -- (diss) "On the effect of physicochemical transformations and diffusion upon heat exchange in the streams of gas mixtures." Mos, 1958. 9 pp (Mos Order of Lenin and Order of Labor Red Banner State Univ im M. V. Lomonosov), 110 copies Bibliography: p 9 (14 titles) (KL, ~~15-58~~ 17-58, 105)

SHIROKOV, M.F.; VAULIN, Yo.P.

Heat exchange and friction in flows of reacting gaseous mixtures. Nauch. dokl. vys. skoly; fiz.-mat. nauki no.1:128-135 '58. (MIRA 12:3)

1.Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.
(Heat--Transmission) (Gas flow)

VAULIN, E. P., SHIROKOV, M. F. (Moscow)

"On a Method to Accelerate Ionized Gases (Gas-Discharge Plasma) by Electrodynamic Forces."

report presented at the First All-Union Congress on Theoretical and Applied Mechanics, Moscow, 27 Jan -3 Feb 1960.

VAULIN, E. P., CHESNOKOV, N. A., SHIROKOV, M. F. (Moscow)

"Experiments Related to the Acceleration of Ionized Gases (Gas-Discharge Plasma) by Electrodynamic Forces in a Special Test Arrangement."

report presented at the First All-Union Congress on Theoretical and Applied Mechanics, Moscow, 27 Jan - 3 Feb 1960.

GVOZDKOV, N.N.; VAULIN, Ye.P.; ATENKOV, S., tekhn. red.

[Heat transfer from a porous plate in gas flow; Conference on Heat and Mass Transfer, Minsk, January 23-27, 1961] O teplo-obmene poristoi plastiny v gazovom potoke; soveshchanie po teoplo-i massoobmenu, g. Minsk, 23-27 ianvaria 1961 g. Minsk, 1961. 16 p. (MIRA 15:2)
(Heat—Transmission) (Gas flow)

VAULIN, Ye.P.; ATENKOV, S., tekhn. red.

[Heat and mass transfer in a body in the case of a solid-gas phase transition occurring on its surface; Conference on Heat and Mass Transfer, Minsk, January 23-27, 1961] Teplo- i massoobmen pri nalichii na poverkhnosti tela fazovogo perekhoda tverdoe telo - gaz; soveshchanie po teplo-i massoobmenu, g.Minsk, 23-27 ianvaria 1961 g. Minsk, 1961. 16 p. (MIRA 15:2)
(Heat--Transmission) (Sublimation) (Mass transfer)

26.2311

25026
S/057/61/031/007/007/021
B108/B209

AUTHORS: Shirokov, M. F., Vaulin, Ye. P., and Chesnokov, N. A.

TITLE: Some experiments to steady plasma flow in a homopolar

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 31, no. 7, 1961, 802-805

TEXT: The authors sudied the stream of an ionized gas in a homopolar (Fig. 1) at a pressure of $4 \cdot 10^{-1}$ mm Hg and in an external magnetic field of H = 250 oersteds. The magnetic field was parallel to the axis of the concentric cylindrical electrodes and perpendicular to the current density vector j. For the measurement of the velocity v, a rotary shaft was used, suspended on a thin thread (length L = 10 cm, radius R = $1.25 \cdot 10^{-2}$ mm, torsion modulus N = $6.5 \cdot 10^{11}$ dyne/cm^2). Thin mica reeds of various width (a = 0.2, 0.3, 0.4, 0.5, 0.7 cm) and a length of b = 4 cm were fastened to the thin end of the shaft, perpendicular to the current. The mean velocity was obtained from the torques produced by the current and by the thread. The reed experiments made it possible to determine a maximum a_m = 4 cm,

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Some experiments to steady ...

at and below which the current pinch, due to the insertion of the reed, does not interfere with the velocity measurement. When the plasma stream is laminar, the current density through the cathode is connected with the stream velocity by the relation $\frac{j_1 H}{c} = \frac{45\rho v^2}{2dR}$ (4); the ratio of the tube width to the cathode radius was $\frac{d}{r_1} = 0.67$; c is the resistivity coefficient, ρ - the density of the gas. In the case of turbulent flow, the above relation has the form $\frac{j_1 H}{c} \approx \frac{0.3\rho v^2}{R^{1/4} 2d}$ (5). Applying the logarithm to these relations, one obtains $\log v = \log I - \log\left(\frac{45 c \eta S_1}{2d^3 H}\right)$ (6) for the laminar case and

$$\lg v = \frac{4}{7}\lg I - \frac{4}{7}\lg\left(\frac{0.3 c \rho^{1/4} \eta_1^{1/4} S_1}{2d^{3/4} H}\right), \qquad (7)$$

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Some experiments to steady ...

for the turbulent case, where $I = j_1 S_1$; S_1 - cathode area. For the laminar flow, a coefficient $c = \frac{10.2}{R_s}$ has to be used (Ref. 2: J. Schmiedel. Phys. Zs., 29, 593; 1938), where R_s is the Reynolds number of the reed in the stream. In the turbulent case, $c \approx 1$. The experimental results are in good agreement with the formulas for the turbulent and the laminar plasma stream, but considering that the Reynolds number $R_s < 2.5$, the flow has to be regarded as being laminar. There are 5 figures and 2 references: 1 Soviet-bloc and 1 non-Soviet-bloc.

ASSOCIATION: Moskovskiy aviatsionnyy institut imeni Sergo Ordzhonikidze Kafedra fiziki (Moscow Aviation Institute imeni Sergo Ordzhonikidze, Department of Physics)

SUBMITTED: November 30, 1959

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S/057/62/032/002/018/022
B124/B102

26.7181

AUTHORS: Vaulin, Ye. P., and Gvozdkov, N. N.

TITLE: Heat insulation of a porous plate in a dynamic gas flow by diffusive leakage of a liquid and physicochemical reactions in the laminar flow interface

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 32, no. 2, 1962, 238 - 247

TEXT: With respect to the complexity of the processes involved, the problem had to be solved by examining first the convection of heat in a porous plate with the leakage of a liquid, and then the heat exchange between the plate and the dynamic gas flow. Thus, the heat convection process in the porous plate with leakage of a liquid is considered, laminar interface equations are analyzed with respect to physicochemical changes and to the diffusion of reaction or evaporation products in the gaseous flow, and, finally, the special case of heterogeneous physicochemical conversion is treated. For T_1 (temperature at an arbitrary point of the solid skeleton of the porous plate) one obtains $T_1 = \frac{1}{Pe} \sum_{k=0}^{2} c_k \gamma_k e^{(Pe/\gamma_k)x} + C_3$, where P is

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Heat insulation of a ...

the Peclet number of the leaking liquid, $\psi_k = \frac{3}{1+2\sqrt{1+z}\cos\frac{\varphi+2k\pi}{3}}$, whereas T_2 is given by $T_2 = \frac{1}{Pe}\sum_{k=0}^{2} c_k \psi_k b_k e^{(Pe/\psi_k)x} + C_3$ with $b_k = 1 - \frac{3}{\psi_k^2 z}\left(1+\frac{1-\omega_2}{\omega_2}\frac{\lambda_1}{\lambda_2}\right)$

where ω_1 and ω_2 are the solid and the liquid-filled portion of a given volume of the plate, λ_1 and λ_2 are the heat-transfer coefficients of the solid skeleton and of the pores, respectively, c_k is determined from the system of linear equations

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Heat insulation of a ...

$$\left.\begin{aligned} T_w^* &= \frac{1}{Pe}\sum_{k=0}^{2} c_k\psi_k e^{\frac{Pe}{\psi_k}} + C_3,\\ 1 &= \frac{1}{Pe}\sum_{k=0}^{2} c_k\psi_k + C_3,\\ T_w^* &= \frac{1}{Pe}\sum_{k=0}^{2} c_k b_k\psi_k e^{\frac{Pe}{\psi_k}} + C_3,\\ 1 &= \frac{1}{Pe}\sum_{k=0}^{2} c_k b_k\psi_k + C_3, \end{aligned}\right\} \qquad (19),$$

i. e., $c_k = \frac{\Delta_k}{\Delta}$ with Δ_k and Δ being determinants of (19). The total heat balance is given by

$$\sum_{k=0}^{2}\Delta_k\left(1-e^{\frac{Pe}{\psi_k}}\right)\left(1-\frac{3}{z\psi_k^2}\right)=\frac{Pe\,\Delta}{1+\frac{1-\omega_2}{\omega_2}\frac{\lambda_1}{\lambda_2}}(T_w^*-1). \quad (22).$$

This equation yields the functional relation of the parameters $f(z, Pe, \frac{\lambda_1}{\lambda_2})$.

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Heat insulation of a ...

$T_2) = 0$, from which the "internal heat emission" coefficient T_w^* can be determined. The pressure required for the liquid to leak through the plate is given by $p_0 = p + \gamma_{0z} w \int_0^l \frac{dx}{\kappa(T_2)}$, where w is the filtration rate, γ_{0z} is the specific density of the leaking liquid, and κ is the filtration coefficient. This equation can also be given in the form $P_0 = P_\infty$ $+0.664 c_{1w} \frac{\log \gamma_\infty}{L \kappa} \mathrm{Re}_x^{1/2}$, where λ is the heat transfer coefficient between the solid and the liquid portion of the plate, and κ is considered to be independent of temperature. The equation

$$Q = \frac{1}{L}\int_0^L Q_w dx_1 = 0.664 \frac{c_1 \rho_\infty'' \infty T_\infty}{P^{2/3} \mathrm{Re}_\infty^{1/2}} \left[\frac{T_w}{T_\infty}\left(1 + \frac{|q_1| c_{1w}}{c_p T_w}\right) - \left(1 + \frac{\gamma - 1}{2} M_\infty^2 \sqrt{P}\right)\right]. \quad (57)$$

or

$$Q = -\frac{T_{0r}}{l} \sum_{k=0}^{2} \frac{\lambda_k}{\Delta} e^{\frac{P_0}{\psi_k}} (\omega_1 \lambda_1 + \omega_2 \lambda_2 b_k). \quad (58),$$

may be used to calculate the mean heat flow in the section. By comparing

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Heat insulation of a ...

(57) with (58), $\frac{T_0}{T_\infty} = \frac{T_w}{T_\infty}\left(1 + \frac{|q_1|c_{1w}}{c_p T_\infty}\right) + 1.5P^{-1/3}\,Re_\infty^{-1/2}\,\frac{L}{l}\,\frac{T_{cr}}{T_\infty}\sum_{k=0}^{2}(\omega_1\frac{\lambda_1}{\lambda_\infty}\cdot\omega_2\frac{\lambda_2}{\lambda_\infty}b_k)\frac{\Delta k}{\Delta}e^{Pe/\psi k}$ (59) which interrelates the critical parameters of the gas, the coolant, and the characteristics of the porous plate. The necessary consumption of cooling liquid is determined under given conditions from Eq. (56). Dorodnitsin (Ref. 4: N. Ye. Kochin, N. A. Kibel', N. V. Roze, Teoreticheskaya gidromekhanika (Theoretical hydromechanics), p. 2, Gostekhizdat, 1958) is mentioned. The authors thank M. F. Shirokov. There are 1 figure and 5 references: 4 Soviet and 1 non-Soviet.

ASSOCIATION: Kafedra statisticheskoy fiziki i mekhaniki MGU, Fizicheskiy fakul'tet (Department of Statistical Physics and Mechanics of MGU, Division of Physics)

SUBMITTED: December 16, 1957 (initially)

November 2, 1960 (after revision)

X

Card 5/5

VAULIN, Ye. F.

"Some problems of a boundary-layer theory with physical-chemical transitions on a body surface."

report submitted for 2nd All-Union Conf on Heat & Mass Transfer, Minsk, 4-12 May 1964.

Moscow Aviation Inst.